

U.S. Imports of Sugarcane Ethanol

DRAFT – PRELIMINARY ANALYSIS

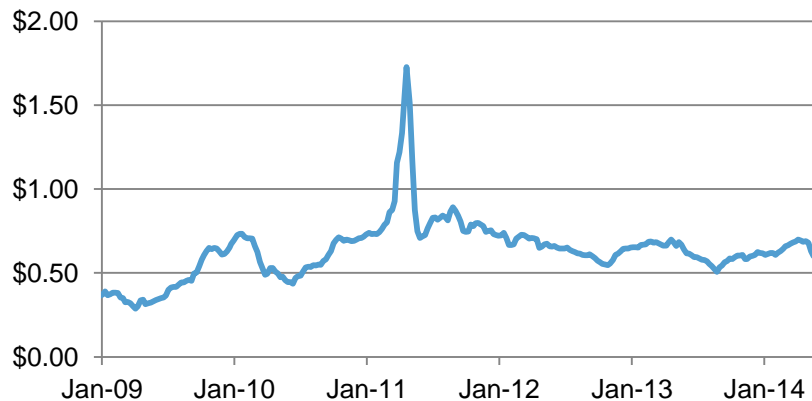
May 27, 2014

Import levels of sugarcane ethanol are sensitive to a number of drivers

- Size of Brazil's sugar crop
 - Weather effects, such as droughts
 - Lifecycle of sugar fields – yields from older fields are lower
- Exchange rate of Brazilian real vs. U.S. Dollar
- The world sugar price
 - Alternative uses for ethanol or refined sugar
- Brazil's government-controlled domestic gasoline price
 - Recent suppressed gasoline prices have reduced domestic demand for ethanol
- Tax policies
- Opportunity cost for different crops
- U.S. renewable policy and rules
- U.S. corn and ethanol production
- Trading arbitrage opportunities

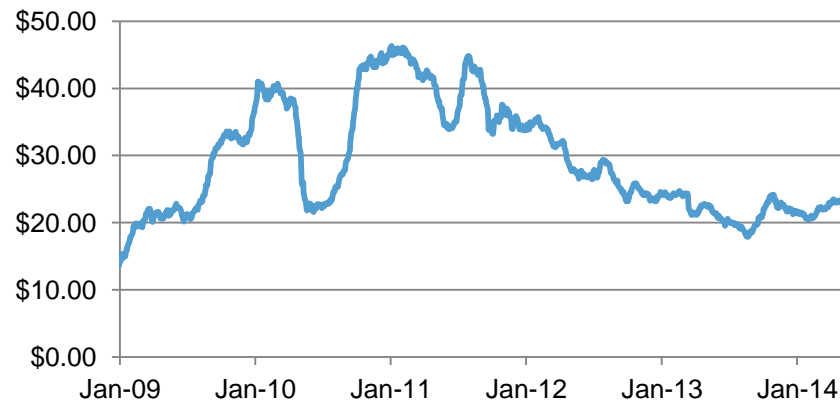
Market factors influencing import levels are highly volatile

Ethanol Price (Brazil), US\$/liter



Source: CEPEA

Sugar Price (Brazil), US \$/50kg



Source: CEPEA

US Corn, US\$/bushel



Source: USDA

Brazilian Reals / US\$



Source: www.x-rates.com

Specific events driving recent large changes in imports from Brazil

Low imports of Brazilian ethanol 2009-2011

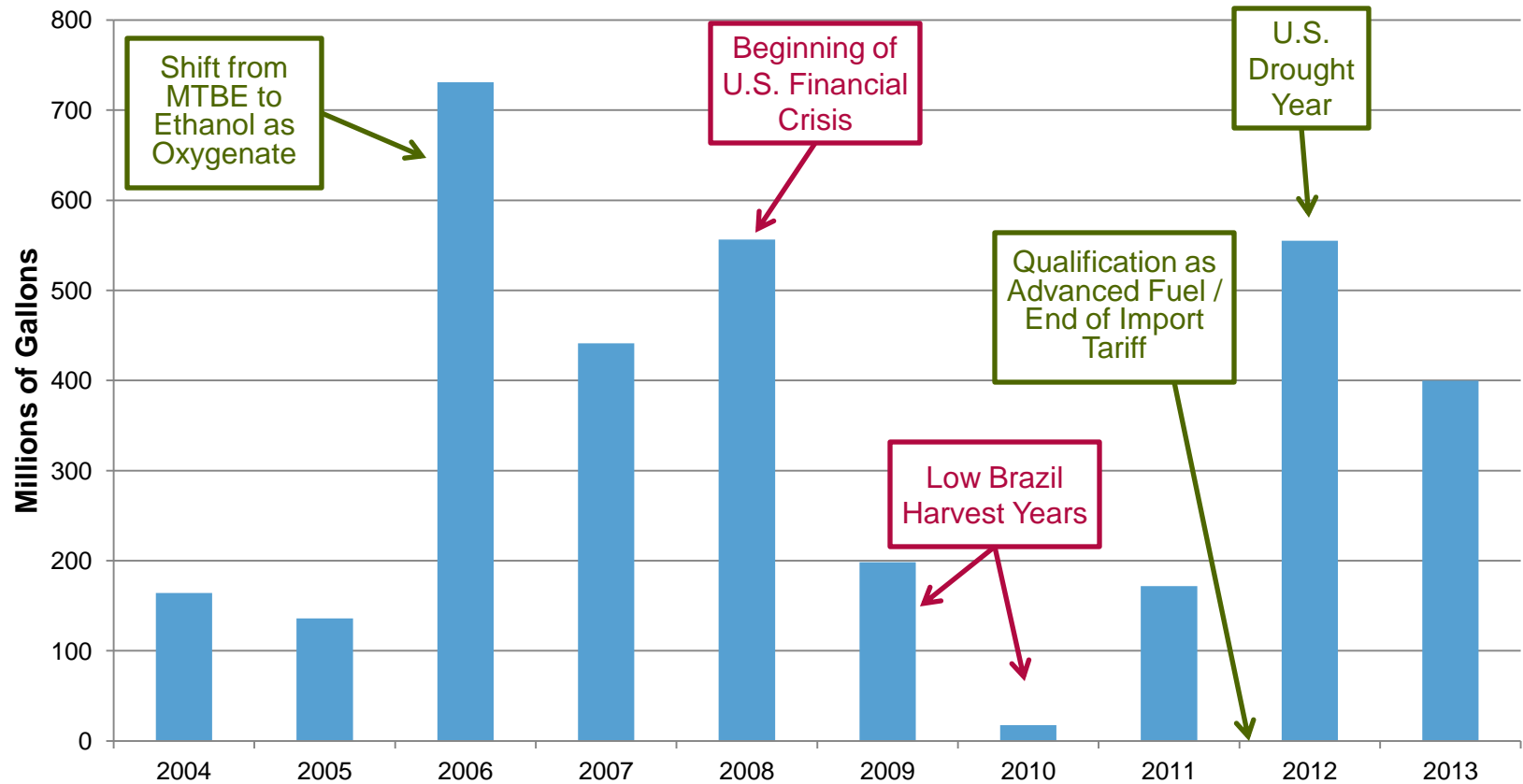
- U.S. financial crisis and recession
 - ◆ Reduced gasoline consumption and demand for ethanol
 - ◆ Dramatic fall in investment in Brazilian ethanol from \$7.8 billion in 2008 to \$700 million in 2011
- Brazilian economic slump
 - ◆ Brazilian government froze price of petroleum and diesel fuel, reducing domestic demand for ethanol
- Reduction in new planting; productivity fell from 115 tonnes per hectare in 2008 to 69 tonnes per hectare in 2012

Rebound of imports in 2012

- End of 30-year old tariff on imported ethanol
- Sugarcane ethanol qualified as advanced biofuel (D5 RIN)
- Drought in U.S. decreased corn production (-13%) and domestic ethanol supply

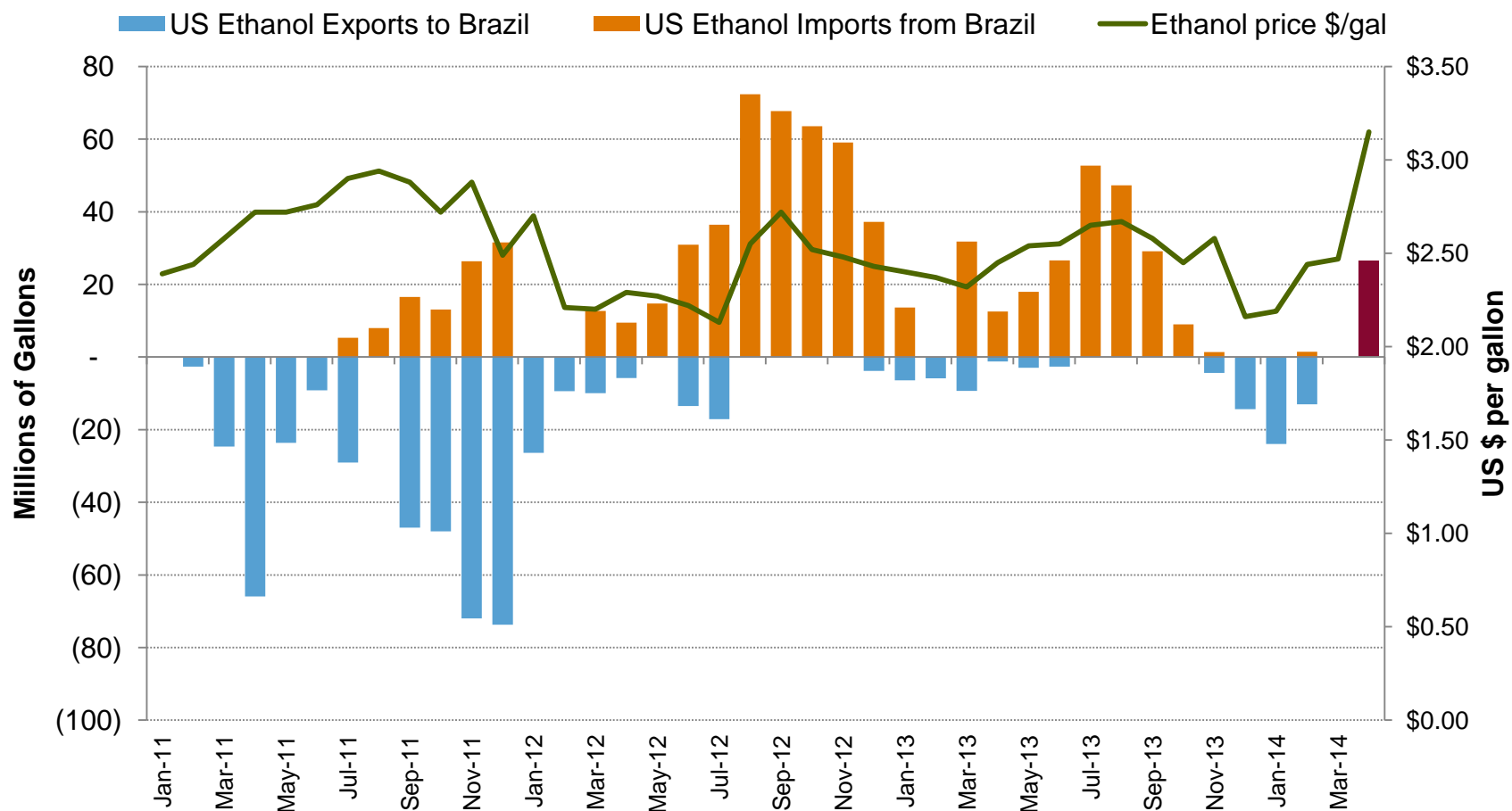
Large swings in sugarcane ethanol imports based on supply and demand

US Imports of Fuel Ethanol



Sources: EIA and USITC

Imports from Brazil are responsive to economics on short timescales

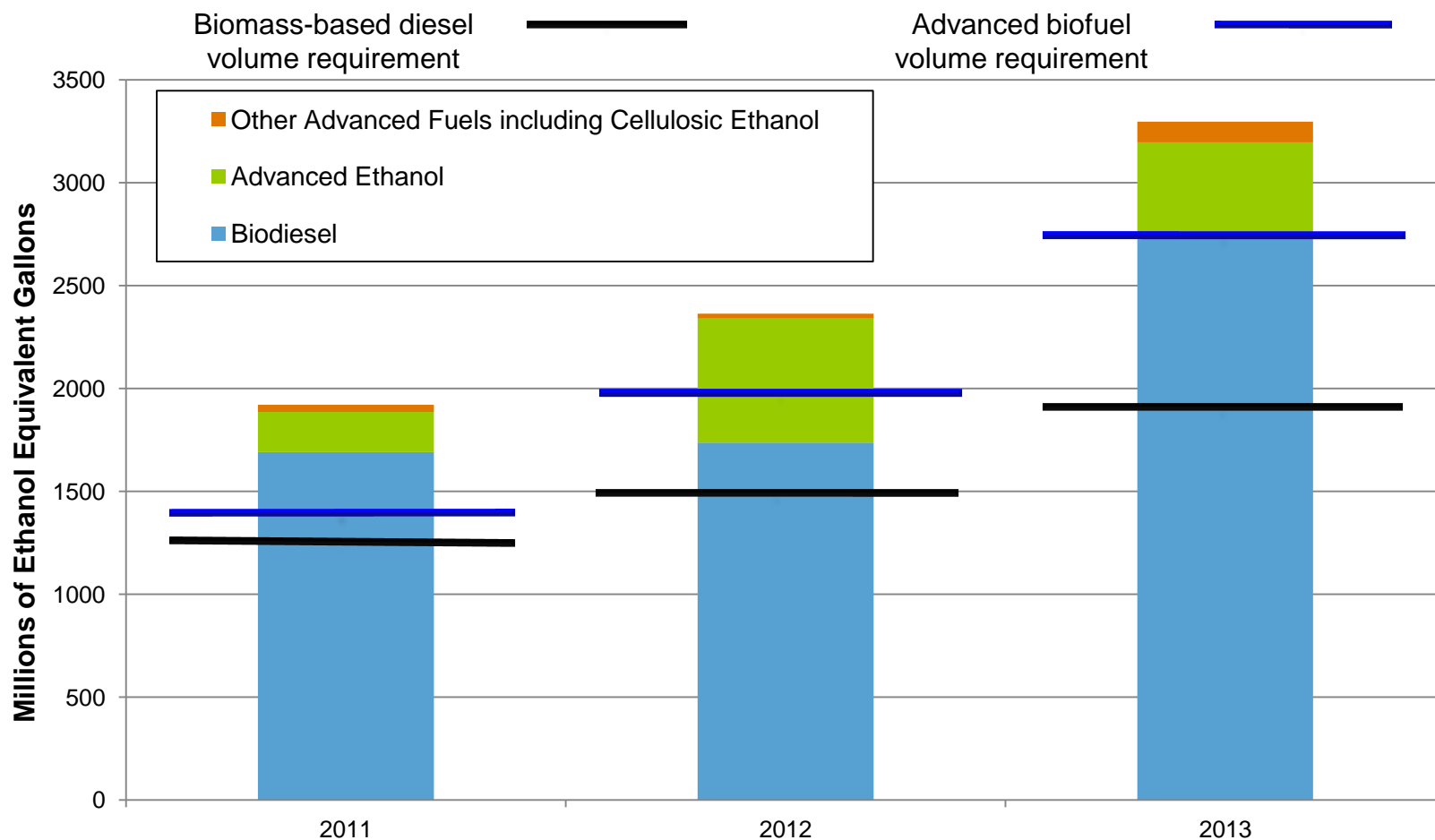


Sources: Imports / exports - EIA (to Feb 2014); Platts market report (Apr 2014)
Ethanol price - Nebraska Ethanol Board

Trading arbitrage opportunities determine imports/exports; imports and exports may occur simultaneously

Brazilian ethanol will fill the advanced biofuel volume above the biodiesel volume requirement based on economics

Imported advanced ethanol made up a significant portion of non-biodiesel advanced fuel, even in 2013 when US biodiesel production was high



Source: EMTS